Claims

1. Turbine farm comprising at least a first turbine (1) and at least a second turbine (2) by means of which energy can be extracted from a flowing fluid (5), characterised in that when the second turbine (2) is on the lee side of the first turbine (1), under nominal power, the axial induction (a) of the first turbine (1) is lowered with respect to the second turbine (2), to reduce turbulence mainly at the location of the at least second turbine.

2. Turbine farm according to Claim 1, characterised in that the power of the farm as a whole does not fall.

3. Turbine farm according to one of the preceding claims, characterised in that the axial induction (a) of the first turbine (1) is reduced to 0.25 or less.

4. Turbine farm according to one of the preceding claims, characterised in that lowering of the axial induction is effected by reducing the speed of revolution and/or turning the blade angles of the rotor.

5. Turbine farm according to one of the preceding claims, characterised in that lowering of the axial induction is effected by reducing the chord of the blades.

6. Turbine farm according to Claim 5, characterised in that at least the first turbine has rotors, each rotor with a chord characteristic, $\frac{Nc_r\lambda_r^2}{r}$, of less than 3.75, where r is a radial distance that runs between $0.5R$ and $0.8R$, where R is the radius of the rotor.

7. Turbine farm according to one of the preceding claims, characterised in that a control system is provided, wherein this control system sets the axial induction of at least one first turbine in the farm as a function of the wind direction.

8. Turbine farm according to Claim 7, characterised in that the control system sets the axial induction of at least one turbine as a function of the turbulence in the wind.

9. Turbine farm according to Claim 8, characterised in that the control system sets the axial induction of the first turbine (1) on the basis of a measure for the turbulence determined at the second turbine (2) that is located essentially on the lee side of the first turbine (1).

10. Turbine farm according to Claims 7, 8 or 9, characterised in that the control system sets the axial induction of at least one first turbine as a function of the distance to at least one second turbine located in the lee.

11. Turbine farm according to one of Claims 7, 8, 9 or 10, characterised in that this control system is able to set the axial induction of at least half of all wind turbines in said farm as a function of the wind direction.

12. Turbine farm according to one of Claims 7 to 11, characterised in that the control system sets the axial induction of at least one turbine on the basis of, inter alia, the distance to other turbines in the wake and/or on the basis of the number of turbines in the wake.

13. Turbine farm according to one of Claims 7 to 12, characterised in that the control system optimises the farm performance measured in terms of maximum yield and/or minimum loads by adjusting the axial inductions of individual turbines.

14. Turbine farm according to Claim 13, characterised in that the control system is self-learning.

15. Turbine farm according to one of the above claims, wherein at at least one wind speed at least one first turbine, essentially located on the windward side of the farm based on the dominant wind direction, differs in terms of axial induction from at least one second turbine, essentially located on the lee side of the farm, by on average more than 0.05.

16. Turbine farm according to one of the above claims, characterised in that the turbine farm comprises at least 50 turbines and wherein the surface area occupied by the turbines is at least more than 3 % of the farm surface area.

17. Turbine farm according to one of the above claims, characterised in that the axial force of the entire farm is reduced such that the power of another farm located in the lee is increased.

18. Turbine farm according to one of the above claims, characterised in that the fluid is water and the turbines are water turbines that extract energy from a flow of water.

19. Method for a turbine farm comprising at least one first turbine (1) and an at least second turbine (2) by means of which energy can be extracted from a flowing fluid (5), characterised by

lowering the axial induction (a) of the first turbine (1) with respect to the second turbine (2) when the second turbine (2) is on the lee side of the first turbine (1), under nominal power, to reduce turbulence mainly at the location of the at least second turbine.

20. Design software for a turbine farm comprising at least a first turbine (1) and at least a second turbine (2) by means of which energy can be extracted from a flowing fluid (5),

wherein the design software is able to calculate a favourable installation and a favourable method for the turbine farm,

characterised in that, the software is able to

- add guiding elements to the installation, where turbines have a guiding function, and

when the second turbine (2) is on the lee side of the first turbine (1), under nominal power, the axial induction (a) of the first turbine (1) is lowered with respect to the

second turbine (2) to reduce turbulence mainly at the location of the at least second turbine, to calculate the influence thereof on the turbine farm.

21. Control software for a turbine farm comprising at least a first turbine (1) and at least a second turbine (2) by means of which energy can be extracted from a flowing fluid (5),

wherein the control software is able to determine at least one of meteorological parameters comprising wind speed and wind direction, temperature distribution and stability of the atmosphere

and to determine and set the power of the turbine farm as a function of at least one of parameters that can be set, comprising axial induction, speed of revolution, the rotor blade angle, angle of inclination, circulation scale and positions of the turbines, characterised in that, the control software is able

when the second turbine (2) is on the lee side of the first turbine (1), under nominal power, to lower the axial induction (a) of the first turbine (1) with respect to the second turbine (2) to reduce turbulence mainly at the location of the at least second turbine by setting at least one of the parameters that can be set.

22. Control software for a turbine farm according to Claim 21, characterised in that the software is able to find an optimum for the power of the turbine farm by setting the parameters that can be set.

23. Control system for a turbine farm comprising at least a first turbine (1) and at least a second turbine (2) by means of which energy can be extracted from a flowing fluid (5), characterised in that the control system is able, when the second turbine (2) is on the lee side of the first turbine (1), under nominal power, to lower the axial induction (a) of the first turbine (1) with respect to the second turbine (2) to reduce turbulence mainly at the location of the at least second turbine.

24. Control system according to Claim 23, characterised in that the control system sets the axial induction of at least one first turbine in the farm as a function of the wind direction.

25. Control system according to Claim 23 or 24, characterised in that said control system is able to set the axial induction of at least half of all wind turbines in said farm as a function of the wind direction.

26. Control system according to one of Claims 23 to 25, provided with control software according to Claim 21.

27. Control system according to one of Claims 23 to 26 provided as central control system.

28. Control system according to one of Claims 23 to 26 provided as individual control system for the at least one first turbine.

29. Turbine provided with control system according to Claim 23.